

COMPOSITE BIOCOMPATIBLE MATRICES

ABSTRACT OF THE DISCLOSURE

A composite matrix has a first layer and a second layer. The first layer includes at least about 5 dry weight percent flexibility modifying agent. The second layer includes at least about 5 dry weight percent less flexibility modifying agent than the first layer. A valved prosthesis with flexible leaflets supported by a wall can be formed from the composite materials. In some embodiments, the wall of the prosthesis includes a first layer with at least about 60 weight percent collagen and a second layer with at least about 25 weight percent collagen and at least about 5 weight percent elastin. The leaflets preferably include a first layer with at least about 60 weight percent collagen and a second layer with at least about 25 weight percent collagen and at least about 5 weight percent proteoglycans.